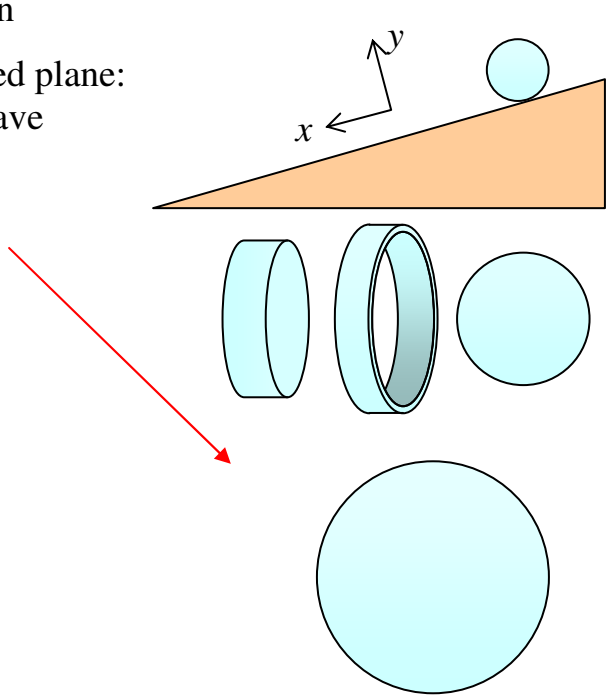
Rolling Motion

A group of "round" objects rolls down an inclined plane: a solid cylinder, a sphere, and a thin hoop. All have different mass and different sizes.

My FBD is the rolling object (any one of them):



Data from Table 11-2

Object	I_{CM}	I_{CM}/mR^2
Cylinder	$(\frac{1}{2})mR^2$	$\frac{1}{2}$
Sphere	$(\frac{2}{5})mR^2$	$\frac{2}{5}$
Hoop	$(1)mR^2$	1